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ABSTRACT

While the Minnesota Multiphasic Personality Inventory (MMPI) has retained its popularity within the clinical community for over 40 years, some investigators have criticized its ability to provide an accurate diagnosis. Codetype systems of MMPI score interpretations were developed and a predictive relationship between codetypes and diagnoses was established. The codetype diagnostic systems were predicated on broad non-specific diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM) I (1952) and II (1968). The narrow diagnostic criteria found in the DSM-III (1980) have led several researchers to question the diagnostic validity and usefulness of the MMPI. Researchers are currently assessing the relationship between the MMPI and DSM-III. A review of the literature examining the MMPI and DSM-III relationship suggests that: (1) MMPI codetypes have retained their moderate diagnostic predictive validity; (2) multivariate statistical techniques enhance the MMPI's ability to correctly classify diagnostic groups; and (3) MMPI derived personality descriptions continue to be valid and reliable as an aid in diagnostic assessment. (Author/NB)

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MMPI Codetypes and DSM-III Diagnoses

A Brief Review

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Running Head: MMPI AND DSM-III

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Abstract

Research specific to the investigation of the relationship between Minnesota Multiphasic Personality Inventory (MMPI) codetypes and DSM-III diagnoses is reviewed. The narrow diagnostic criteria found in the DSM-III have led several researchers to question the diagnostic validity and usefulness of the MMPI. The articles reviewed suggest that: (a) MMPI codetypes have retained their moderate diagnostic predictive validity, (b) Multivariate statistical techniques enhance the MMPI's ability to correctly classify diagnostic groups, and (c) MMPI derived personality descriptions continue to be valid and reliable as an aid in diagnostic assessment.

The Minnesota Multiphasic Personality Inventory (MMPI) has retained its popularity within the clinical community for over 40 years. The early belief that a diagnosis could be associated with an MMPI single scale elevation was short lived (Colligan, 1985; Osborne, 1985) because most patients had elevations on more than one scale. That the majority of patients obtained elevations on a combination of scales led Hathaway and McKinley (1951) to recommend that interpretations be based on profile patterns and not individual scales. Responding to this need, Meehl became a part of MMPI history with his 1956 article, "Wanted - a good cookbook". As a result, cookbook/actuarial systems of interpretations were developed (e.g., Gilberstadt & Duker, 1965; Lachar, 1977; Marks, Seeman, & Haller, 1974). These codetype systems provided the clinician with an expedient assessment and description of the patient's personality. Not unexpectedly, researchers established a predictive relationship between particular codetypes and diagnoses. Consequently, the MMPI was again purported to be a valid diagnostic tool.

Investigators have criticized the MMPI's ability to provide an accurate diagnosis (Fashingbauer, 1979). Diagnostic doubt is reflected in the diagnostic qualifiers associated with codetypes (e.g., 2-8 codetype profile - "predominantly

psychotic"; 2-7 codetype profile - "majority psychotic, significant elements of psychoneurosis"; 4-8 codetype profile - "less likely to be diagnosed schizophrenic"; etc.). The MMPI, nevertheless, continued to enjoy favor among diagnosing clinicians. The publication of the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III, 1980) however, revived the question of the MMPI's ability to validly identify or differentiate diagnostic categories. This renewed attention seemed justified because the codetype diagnostic systems were predicated on criteria of the DSM-I (1952) and DSM II (1968); systems with broad non-specific diagnostic criteria. The DSM-III, on the other hand, provides specific diagnostic criteria for inclusion into a diagnostic category.

Researchers are currently assessing the relationship between the MMPI and DSM-III. In literature specific to the MMPI and the DSM-III (a) Winters, Weintraub, and Neale (1981) suggested that the MMPI may not be useful in identifying DSM-III schizophrenic disorders, (b) Walters (1983) wondered whether the MMPI has predictive validity in regard to DSM-III schizophrenic disorders, and finally (c) Witigers, Williams, and Spitzer (1985) indicated that the value of the MMPI in

diagnosing DSM-III disorders is unclear.

The Search For Relationships

Marks, Seeman, and Haller Codetypes

MMPI literature (e.g., Lachar, 1977; Marks, Seeman, and Haller 1974; Newmark, 1979; Winters et al., 1981) has frequently suggested that the Marks, Seeman, and Haller codetypes are "good" predictors of DSM-II diagnoses. The seven Marks, Seeman, and Haller schizophrenic codetypes (2-8, 2-7-8, 4-6, 4-6-8, 6-8, 8-9, 9-6) have a group mean "hit rate" of 68%. Using these codetype rules for predicting schizophrenia, Winters, et al. correctly identified 68.3% of a DSM-II schizophrenic sample. When their sample was re-diagnosed according to DSM-III criteria, the "hit rate" fell to 37.1%. Based on these results Winters et al. speculated that the MMPI may not be useful with the DSM-III.

A 56% decline in predictive validity deserves further review. More specifically, Walters (1983) and Suess (1983) reported concern with methodological issues (a) Winters et al. use of the mini-mult, (b) re-diagnosing the original sample (resulting in 51% reduction of the schizophrenic patients), (c) discarding subjects with a validity scale greater than 70, and (d) using only codetypes.

In an attempt to re-examine the DSM-III relationship reported by Winters etal., Suess analyzed MMPI profiles obtained from 195 male inpatients with a DSM-III diagnosis of either Schizophrenic Disorder or Major Affective Disorder. The MMPI's were assigned a schizophrenic or affective codetype according to the rules of Marks, Seeman, and Haller. The concurrent validity of the codetypes was assessed. The agreement between the "affective" codetypes and the actual DSM-III affective diagnosis was fair (43.3%) but the correspondence between the "schizophrenic" codetypes and DSM-III Schizophrenic disorders was good (63.6%). These DSM-III schizophrenic "hit rates" were essentially equivalent to the DSM-II "hit rates" reported by Marks, Seeman, and Haller and Winters et al. (68.1% and 68.3% respectively). The 56% decline in the Winters et al. re-diagnosed DSM-III sample is difficult to explain, however, probably is due to the interaction of the methodological issues presented above.

High Point Elevations

Consistent relationships of high point pair elevations were reported by Suess (1983), Winters et al., (1981) and Walters (1982). Winters et al. found that two codetypes (4-6 and 6-8) performed better than all other codetypes in

identifying DSM-III schizophrenic disorders. Suess reported significant correspondence between two schizophrenic codetype pairs (4-6 and 6-8) and one affective codetype pair (2-7) with their associated DSM-III diagnosis.

Walters reported that high point pairs containing Scale 8 (Sc) identified 77.2% of patients receiving a DSM-III diagnosis of schizophrenia. Suess found that Scale 8 pairs identified 77.7% of a DSM-III schizophrenic population. Clearly, MMPI Scale 8 has retained its original usefulness and validity.

Multivariate Statistical Research

Research indicates that much potential information is lost when only MMPI pairs of codetypes are analyzed (Newmark, 1979). Walters (1982) evaluated the MMPI's of inpatients with a DSM-III diagnosis using multivariate analysis of co-variance. Walters found no significant MMPI scale differences between patients with schizophrenic disorders and those with affective disorders.

Johnson, Klinger, and Giannetti (1980) conducted research to determine the effect of narrow criteria on the predictive validity of the MMPI by comparing the MMPI's ability to predict category membership for five "DSM-III-like" categories. Results of a discriminant analysis revealed that the MMPI's ability to predict a narrow band (DSM-III-like) diagnosis was

almost twice as great as that for broad band (DSM-II) diagnosis. Their discriminant function, however, was able to correctly classify both the DSM-III and DSM-II categories significantly better than expected by chance.

Utilizing the 13 MMPI scales as discriminating variables, Suess (1983) reported a discriminant function which correctly classified 71.8% of 195 patients with DSM-III diagnoses (correct classifications: 66% schizophrenic; 78% affective). The function was far superior to the codetypes for predicting affective disorders and somewhat better than the codetypes for predicting schizophrenic disorders. Both Johnson et al. (1980), and Suess reported that the use of discriminant functions enhanced the MMPI's diagnostic predictive validity.

The Cattell (1949) profile correlation (r_p) evaluates MMPI profiles in terms of their differences in patterns and their separation between profiles. Anderson and Suess (1982) found that MMPI profiles of the DSM-III schizophrenic disorders groups and affective disorders groups are neither significantly similar nor significantly different (r_p=-.144 ns). The profile correlation between bipolar disorder and depressive disorder groups was significantly different (r_p=-.899, $P < .01$) as was the correlation between the Schizophrenic Disorder, Paranoid Type

and Schizophrenic Disorder "other" type groups (r_{pb}=-.601, P<.01). These results suggest that the use of r_{pb} may provide significant additional information in assessing diagnostic predictive validity. Research employing profile or pattern similarity (i.e., shape, elevation, and scatter; Skinner and Jackson (1978) in multivariate analysis has been limited but valuable.

Conclusion

The results of this review are encouraging and suggest that the MMPI may continue to enjoy as controversial a diagnostic relationship with the DSM-III as it has with its diagnostic predecessors. Three outstanding points can be inferred from the data reviewed: (a) the DSM-III criteria have not significantly affected the codetype predictive validity of the Marks, Seeman, and Haller codetypes; (b) multivariate statistical techniques enhance the MMPI's predictive ability; and perhaps more importantly (c) the majority of high point elevations and codetypes (with the exception of 4-6, 6-8, and 2-7) continue to have, at best, moderate validity for predicting diagnoses.

In summary, the MMPI continues to thrive even though clinicians regularly demand diagnostic performance beyond its ability. Through the decades a review of MMPI literature lends variable support of the "MMPI codetype-yields-diagnosis" axiom.

Gough (1946) indicated that an elevation does not imply diagnosis. Hathaway and Meehl (1960) stated that MMPI profiles did not always directly provide a diagnosis. Lachar (1977) reported that the use of cookbooks has led to concervative and disappointing diagnostic results. All of these clinicians, however, were faithfully engaged in and supportive of extensive MMPI-diagnostic research.

The MMPI's history yields a pervasive clinical constant - relationships between the MMPI and diagnoses are as valued as controversial. Witigers et al. (1985) query of the MMPI's role in diagnosing DSM-III disorders certainly will not go unanswered. A functional response, essentially unchanged in the MMPI's 40 year history, is offered by Osborne (1985) "....MMPI profiles... make it possible to provide useful and detailed personality information which when combined with information from clinical evaluations can aid in diagnosis" (page 543). But the search has not ended.

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